**Federal Facilities Boundary and Land Use Data Quality Assurance Proposal – February 11, 2016**

**Background**

Accurate federal facility boundary and land use data are needed by July 2016 for use in the Phase 6 Watershed Model. The objective of this proposal is to ensure that the current federal facility boundary layer and land use estimates are as accurate as possible to allow accurate allocation of responsibility and simulation of Best Management Practices (BMP) progress on federal lands in the Phase 6 Watershed model. Efforts have been underway for some time to prepare for this need, including the prototyping and ongoing development of a Federal Facilities Editor Tool, Federal Facility Workgroup meetings, and internal CBP planning meetings between members of the Federal Facility Workgroup and the GIS Team.

**Federal Facility Boundary Data**

For use in the watershed model, federal facility boundary data must be in a GIS layer format (polygon shapefile or feature dataset). The current GIS layer was developed in 2010, and is out of date. For the last several months, some federal partners have provided additions and deletions to their facility lists in spreadsheets, but these additions and deletions must also be made in the GIS layer.

As the Federal Facility Editor tool was developed, it was envisioned that one of its uses might be for federal partners to edit the boundaries of their facilities, thereby keeping the GIS layer up to date with minimal intervention by GIS Team members. However, discussions among the Federal Facility Workgroup have shown that many federal partners who have the capability would prefer to submit their data to CBP in a GIS format, rather than draw and maintain them in the Federal Facility Editor. In addition, web-based GIS editing introduces the potential for problems with data accuracy, and the time needed for the development and maintenance of editing functions, combined with the time needed for quality assurance of edits made by federal partners, would likely outweigh the benefits of allowing web-based editing.

Therefore, the **CBP plans to ask federal partners to submit all new GIS boundary data by March 31, 2016**. **This will allow the GIS Team to complete a new federal facility boundary layer by April 30, 2016**. The GIS Team will work with any federal partners that wish to modify their facility boundaries, but do not have the capacity to generate and submit GIS data, in order to ensure that their data is included.

**Federal Facilities Land Use Data**

It was originally planned that federal partners would review and correct land use data for their facilities using the Federal Facility Editor Tool. Prototyping of the tool, along with the continued development of Phase 6 land use data, showed that this approach would require users to understand and correctly input data for up to 13 classes of land use. The complexity makes it likely that there would be data accuracy issues. In addition, concerns arose regarding the concept of allowing federal partners to override all of CBP’s land use calculations, when state and local government partners are not granted that capability due to the large spatial extent of state and county jurisdictions.

New, high-resolution imagery arriving at the CBP between now and August is allowing the development of the CBP’s most accurate land use dataset to-date. Review of sample data has shown that the main limitation of these data is the ability to differentiate between turf grass, open space, cropland, and pasture land uses, all of which are classed as “low vegetation” in areas outside Virginia. These four types of low vegetation also all have significantly different nutrient export rates.

In order to assure the most accurate land use data for federal facilities, the **CBP plans to ask federal partners to input estimated percentages of turf grass, open space, crop land, and pasture for their facilities between May 1, 2016 and July 31, 2016**, using the Federal Facility Editor Tool. Using the tool will enable federal facilities to view their boundaries overlaid on aerial imagery to assist them in estimating the percentages of turf grass, open space, cropland, and pasture land within each facility’s boundaries. The default assumption for any facilities without data entered by federal partners will be that all areas of low vegetation classified as turf grass and receive some fertilizer inputs.

**Proposed Timeline**

Present – March 31, 2016: Federal partners submit updated boundary data

Present – April 30, 2016: GIS Team develops an updated federal facility GIS layer

Present – April 30, 2016: GIS Team completes development of the Federal Facilities Editor tool

Present – July 31, 2016: GIS Team develops high-resolution land use data

May 1 – July 31, 2016: Federal partners enter percentages of turf grass, open space, crop land, and pasture using the Federal Facilities Editor tool

August 1– August 15, 2016: GIS Team incorporates federal facilities boundary and land use data (i.e., combine the high resolution data with the fractions of the four land use types provided by federal agencies) into the Phase 6 watershed model.